CONPROSYS nano Series
CODESYS Modbus Master CPU Unit
CPSN-PCB271-S1-041

This product is a CPU unit containing RS-232C, LAN interface, and with four expansion slots to support CODESYS programming and Modbus Master.

The CONPROSYS nano series configurable I/O modules can be arranged and combined along with the product to satisfy the user's needs.

* The contents in this document are subject to change without notice.
* Visit the CONTEC website to check the latest details in the document.
* The information in the data sheets is as of July 2022.

* Specifications, color and design of the products are subject to change without notice.

Hardware Features

I/O module expansion
With this product, you can freely add I/O modules to match the necessary functions from among the varied collection of CONPROSYS nano series I/O modules.

Max. 921,600bps RS-232C Serial Communication
The Product has one RS-232C-standard serial port. Baud rates from 110 to 921,600 bps can be set.

Compact Design
Compact design, 110 (W) × 74.8 (D) × 95 (H) mm, features flexibility in installation.

Easy installation and removal of I/O modules
Expansion modules can be installed and removed without any tools.

Adaptable to a wide range of temperature between -20 and +60℃
The product is capable of operating in the temperature between -20 and + 60℃. It can be installed in the various environments.

Installation easy with a two-piece terminal on DIN or with screws
Regarding the power connector, the terminal connector can be removed without a screwdriver. Even when a malfunction occurs, this product can be replaced in a short length of time. Furthermore, as the product is mounted on the DIN rail, removing and replacing are easy as well. This product can also be installed with screws, so it supports a wide range of installation situations.

Equipped with the LED for an operation check
The product has the LED for an operation check, which helps you visually confirm the communication status of each interface.

No electrolytic capacitor
Without an electrolytic capacitor, which has a limited life, we are creating the product with a longer life.

Software Features

Collaborate with the CODESYS
This product features the CODESYS Soft PLC. CODESYS is a device-independent-PLC-programming system that is complied with the IEC 61131-3 standard and supports all standard programming languages such as ST and LD.

Along with Modbus TCP Master and Modbus RTU Master
Modbus is a communication protocol widely applied in the industrial field. Data collecting from devices that contain Modbus Slave function or controlling can be carried out.

Specifications

Function specifications

Item		CPSN-PCB271-S1-041
CPU		ARM Cortex-M3 180MHz
Memory		On Board 16MB SDRAM
ROM		On-Board 4MB NOR Flash for OS
FeRAM		On-Board 32kB
LAN	Transmission standard	10BASE-T/100BASE-TX
	The number of channels	1
	Connector	RJ-45 Connector
	LED	Speed(Orange), Link / Act(Green)
USB	Transmission standard	USB2.0 standard follow
	The number of channels	1
	Connector	TYPE-A
microSD Card slot	Standard	SD standard follow
	Connector	microSD memory card slot
RS-232C	Baud Rate	110 - 921.6kbps
	Isolation	Non-isolated
	Data length	5, 6, 7, 8 bit 1, 1.5, 2 stopbit
	Parity check	Even, Odd, Non-parity
	The number of channels	1ch
	Isolation	Non-isolated
	Connector	9-pin D-SUB Connector (Male)
Expansion slot	Number of slots	4
	Maximum power supply	12 - 24V 200mA, 5V 250mA, 3.3V 200mA (per slot)
	Number of insertions/removals	50 times (min)
LED		PWR(Green) / RUN(Green) / STS(Green) / ERR(Red)
Switch		Push switch
RTC	Monthly error	±15 seconds or less (25℃)
	Backup time	10 years or more (25℃) Lithium primary battery
Power supply *1	Rated input voltage	12 - 24VDC
	Input voltage range	10.8 - 30VDC
	Power consumption	<CPU Unit alone *2> 24V 0.08A (Typ.), 0.1A (Max.), 12V 0.15A (Typ.), 0.2A (Max.) <With I/O module and USB> 24V 1.5A (Max.), 12V 2.0A (Max)
	Connector	2 pieces 3.5mm pitch 3-pin Terminal (V+, V-, FG)
	Applicable wire	AWG24- 16
	Surge protection element V+ - V-, V- - FG	Interactive TVS Diode Stand off voltage : ±30V, Peak pulse power : 400W (1ms)
Physical dimensions (mm)		110(W)×74.8(D)×95(H)mm (not include projection)
Weight		250g
Installation method		Quick installation on a 35 mm DIN rail Vertical installation with screws *3

*1 Use power cable within 3meters.
*2 With no USB load and no expansion slot load
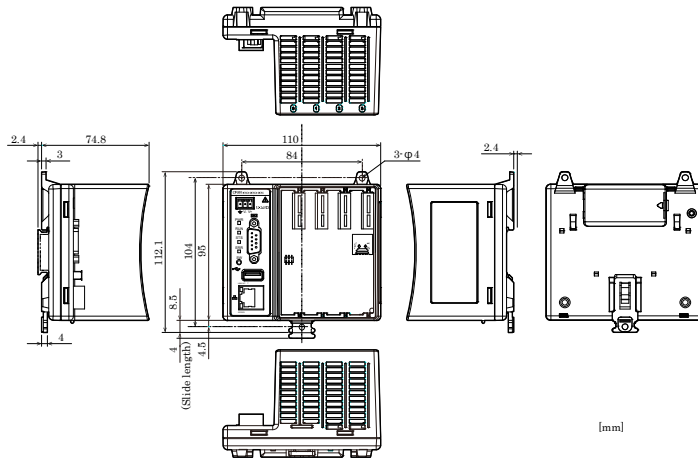*3 Commercially available screws are required.

Installation Environment Requirements

Item	CPSN-PCB271-S1-041
Operating ambient temperature	Vertical installation -20 - +60℃ Vertical installation with an angle of 90° to the right/left, Horizontal installation : -20 - +55℃
Operating ambient humidity	10 to 90%RH (No condensation)
Non-operating ambient temperature	-20 to +60℃
Non-operating ambient humidity	10 to 90%RH (No condensation)
Floating dust particles	Not to be excessive
Corrosive gases	None
Line-noise resistance	Line noise	AC Line/±2kV *1 Signal Line/±1kV (IEC61000-4-4 Level 3, EN61000-4-4 Level 3)
	Static electricity resistance	Touch/±4kV (IEC61000-4-2 Level 2, EN61000-4-2 Level 2) Air/±8kV (IEC61000-4-2 Level 3, EN61000-4-2 Level 3)
Vibration resistance	Sweep resistance	10 - 57Hz*2 / semi-amplitude vibration 0.15mm, 57 - 150Hz / 2.0G 40 minutes each in X, Y, and Z directions (JIS C60068-2-6-compliant, IEC60068-2-6-compliant)
Shock resistance		15G half-sine shock for 11ms in X, Y, and Z directions (JIS C60068-2-27-compliant, IEC60068-2-27-compliant)
Grounding		Class D grounding (previous class 3 grounding), SG-FG/ non-conduction
Standard		VCCI Class A, FCC Class A, CE Marking (EMC Directive Class A, RoHS Directive), UKCA

*1   When an optional power product is used.
*2   When an optional power product is used : 10 - 55Hz (See the manual of optional power product for details)

Physical Dimensions

[mm]

Packing List

Product [CPSN-PCB271-S1-041] ...1
Product Guide...1
Warranty Certificate...1
Serial Number Label...1
Power Connector ...1
Blank panel...3

List of Options
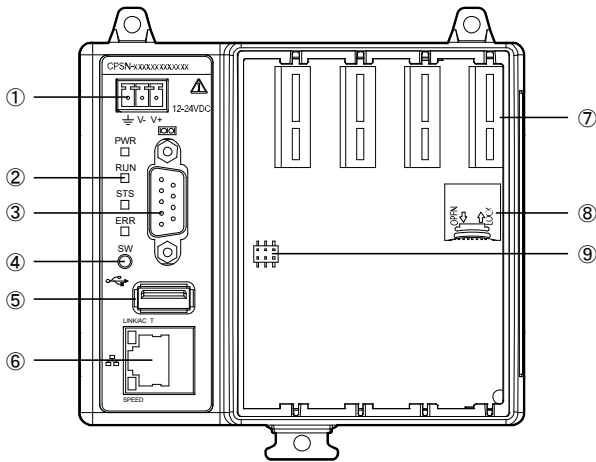
DIN rail mounting power supply
CPS-PWD-30AW24-01 : DIN rail mounting power supply 30[W]
                      Input: 100 - 240VAC, output: 24VDC 1.3 A)
CPS-PWD-90AW24-01 : DIN rail mounting power supply 90[W]
                      Input: 100 - 240VAC, output: 24VDC 3.8 A)

I/O module
CPSN-DI-08L :   with digital input
                       (input 8 channels, No built-in power supply)

CPSN-DI-08BL :   with isolated digital input
                       (input 8 channels, built-in power supply)

CPSN-DI-16BCL :   with isolated digital input (input 16 channels, switchable between
                       external and built-in power supplies, switchable between sink input and source input)

CPSN-DIO-08SL :   with isolated digital input/output (input 8 channels, output 8 channels, sink output)

CPSN-DO-08L :   with isolated digital output
                       (output 8 channels, No built-in power supply)

CPSN-DO-08BL :   with isolated digital output
                       (output 8 channels, built-in power supply)

CPSN-DO-08RL :   with isolated digital output (output 8 channels, source output)

CPSN-DO-08BRL :   with isolated digital output (output 8 channels, built-in power supply, source output)

CPSN-RRY-4PCA :   with relay contact output (4channels)

CPSN-AI-1208LI :   with isolated analog input

CPSN-AI-2408LI :   with isolated analog input (24-bit voltage input 8 channels/current input 4channels)

CPSN-AO-1602LC :   with non-isolated analog output (16-bit voltage output 2 channels/current output 2 channels

CPSN-CNT-3201I :   with isolated counter input (1channel)

CPSN-COM-1PD :   with isolated RS-422A/485 (1channel)

CPSN-SSI-4C :   with isolated the thermocouple input (4channels)

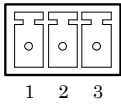*   Visit the Contec website regarding information on the optional products.

Name of each parts

(1) Power Connector : Use the power connector (3 pin connector), included in this package.
(2) LED : Indicates the status of the product.
(3) RS-232C : It is a RS-232C serial ports (male).
(4) Switch : This is used with the software setup.
(5) USB : It is a USB port.
(6) LAN : It is a connector for LAN.
(7) Expansion slot : These are used to supply power to and communicate with expansion modules.
(8) microSD Card Slot : It is for data storage.
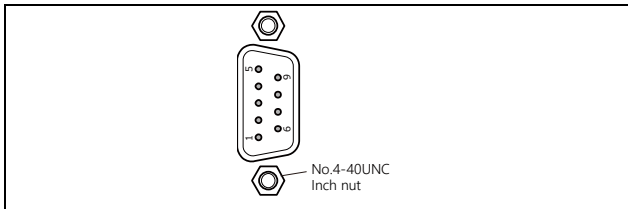(9) Jumper : Please do not use it.

Power Connector (12 - 24VDC)

Use the 3-pin connector, included in this package.
Connector type : DEGSON   15EDGKD-3.5-03P-13-00A(H) (or equivalent)

Pin No	Signal name	Meaning
1	FG	Frame ground
2	V-	Power supply (GND)
3	V+	Power supply (12 - 24VDC)

RS-232C Interface (COM)

This product has 1port of RS-232C compliant serial ports of a baud rate 921,600bps (Maximum).

No.4-40UNC
Inch nut

Pin No.	Signal name	Direction	Meaning
1	CD	Input	Carrier detection
2	RD	Input	Received data
3	TD	Output	Transmitted data
4	DTR	Output	Data terminal ready
5	GND	-----	Signal ground
6	DSR	Input	Data set ready
7	RTS	Output	Request to send
8	CTS	Input	Clear to send
9	RI	Input	Ring indicate